

AMENDMENTS TO THE CLAIMS

1. (Original) A communications system, comprising:
 - a physical layer hardware unit adapted to receive user data over a first communications channel and control codes over a second communications channel, the physical layer hardware unit being further adapted to transmit an upstream data signal over the first communications channel based on transmission assignments defined by the control codes; and
 - a processing unit adapted to execute a software driver for interfacing with the physical layer hardware unit, the software driver including program instructions for implementing a protocol layer to decrypt the user data and provide upstream data to the physical layer hardware unit for generation of the upstream data signal.
2. (Original) The system of claim 1, wherein the control codes include at least one of a power level assignment, a frequency assignment, and a time slot assignment.
3. (Original) The system of claim 1, wherein the physical layer hardware unit includes:
 - an analog front end adapted to sample a received signal and generate received signal samples;
 - a downconverter adapted to process the received signal samples to generate a carrierless waveform including the user data based on receive assignments defined by the control codes;

a demodulator adapted to demodulate the received signal samples to generate the control codes.

4. (Original) The system of claim 3, wherein the physical layer hardware unit includes control logic adapted to receive the control codes and configure the downconverter based on the control codes.

5. (Original) The system of claim 4, wherein the control codes include at least one of a power level assignment, a frequency assignment, and a time slot assignment.

6. (Original) The system of claim 3, wherein the physical layer hardware unit includes:

an upconverter adapted to receive the upstream data and generate an upstream digital signal, wherein the analog front end unit is further adapted to receive the upstream digital signal and generate the upstream data signal; and
control logic adapted to receive the control codes and configure the upconverter based on the transmission assignments defined by the control codes.

7. (Original) The system of claim 1, wherein the processing unit comprises a computer.

8. (Original) The system of claim 7, wherein the computer includes:
a processor complex adapted to execute the program instructions in the software driver;

a bus coupled to the processor complex; and
an expansion card coupled to the bus, the expansion card including the physical layer hardware.

9. (Currently Amended) A modem, comprising a physical layer hardware unit adapted to receive user data over a first communications channel and control codes over a second communications channel, and decode the control channels, the physical layer hardware unit being further adapted to transmit an upstream data signal over the first communications channel based on transmission assignments defined by the control codes.

10. (Currently Amended) The modem of claim 9 [[11]], wherein the control codes include at least one of a power level assignment, a frequency assignment, and a time slot assignment.

11. (Currently Amended) The modem of claim 9 [[11]], wherein the physical layer hardware unit includes:

an analog front end adapted to sample a received signal and generate received signal samples;
a downconverter adapted to process the received signal samples to generate a carrierless waveform including the user data based on receive assignments defined by the control codes;
a demodulator adapted to demodulate the received signal samples to decode [[generate]] the control codes.

12. (Currently Amended) The modem of claim 11 [[13]], wherein the physical layer hardware unit includes control logic adapted to receive the control codes and configure the downconverter based on the control codes.

13. (Currently Amended) The modem of claim 12 [[14]], wherein the control codes include at least one of a power level assignment, a frequency assignment, and a time slot assignment.

14. (Currently Amended) The modem of claim 11 [[13]], wherein the physical layer hardware unit includes:

an upconverter adapted to receive upstream data and generate an upstream digital signal,
wherein the analog front end unit is further adapted to receive the upstream digital signal and generate the upstream data signal; and
control logic adapted to receive the control codes and configure the upconverter based on the transmission assignments defined by the control codes.

15. (Original) A method for configuring a transceiver, comprising:
receiving user data over a first communications channel;
receiving control codes over a second communications channel;
decoding the control codes at a physical layer; and
transmitting an upstream signal over the first communications channel based on transmission assignments defined by the control codes.

16. (Currently Amended) The method of claim 15 [[17]], wherein transmitting the upstream signal comprises transmitting the upstream signal based on at least one of a power level assignment, a frequency assignment, and a time slot assignment.

17. (Currently Amended) The method of claim 15 [[17]], further comprising:
sampling a received signal to generate received signal samples;
downconverting the received signal samples based on receive assignments defined by the control codes to generate a carrierless waveform including the user data; and
demodulating the received signal samples to decode [[generate]] the control codes.

18. (Currently Amended) A modem, comprising:
means for receiving user data over a first communications channel;
means for receiving control codes over a second communications channel;
means for decoding the control codes at a physical layer; and
means for transmitting an upstream signal over the first communications channel based on transmission assignments defined by the control codes.

19. (New) The modem of claim 9, wherein the physical layer hardware unit is further adapted to decrypt the control codes.

20. (New) The method of claim 15, further comprising decrypting the control codes at the physical layer.